ENVIRONMENTAL
Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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Controlling Volatile Organic Compound Emissions from Industrial Sources in New Hampshire

Background

In New Hampshire certain portions of the state exceed the federal health standards for ground-level ozone, the major component of "smog." Ground-level ozone is formed when volatile organic compounds (VOCs) combine with oxides of nitrogen in the presence of sunlight and heat. Examples of VOC-containing materials include coatings, industrial and commercial solvents, petroleum products (e.g., gasoline), diluents, thinners, degreasing agents, and propellants such as isoprene and terpene. In New Hampshire, VOC emissions result primarily from natural (biogenic) sources, with some contribution from human (anthropogenic) sources. Biogenic VOCs originate mainly from forests and urban/suburban vegetation. Anthropogenic sources include transportation (cars, trucks and gasoline loading/unloading), industrial processes (especially coating, finishing , printing and graphic arts, and metal degreasing), and commercial and household use of solvents and architectural coatings (e.g., paints and stains).

Since VOCs are recognized as precursors to ground-level ozone, anthropogenic VOCs are regulated under the federal Clean Air Act and New Hampshire's Clean Air Rules. Currently, consumer products and architectural coatings such as paints, varnishes or stains are regulated at the federal level. New Hampshire's VOC rules, which this fact sheet summarizes, primarily address industrial facilities. These rules were revised in 1992 and 1995 to incorporate additional federal requirements of the Clean Air Act Amendments of 1990 and reflect evolving EPA policy.

What is VOC RACT?

Part Env-A 1204 of New Hampshire's *Rules Governing the Control of Air Pollution* (the "VOC RACT rule") requires VOC Reasonably Available Control Technology (RACT) to control VOC emissions from point or stationary sources. RACT represents control technology that is generally available and that results in the lowest emission rate that sources are reasonably capable of meeting. Such controls are generally industry specific and factor in technological and economic feasibility constraints of particular industry groups or, in some cases, individual facilities. Optimal techniques for VOC control are very industry specific. In general, these techniques include coating reformulation (e.g., the use of low-VOC or water-based coatings), add-on controls such as carbon adsorption systems, design changes and such operation and maintenance (O&M) controls as leak prevention.

In additions to VOC RACT, all **new major** sources and **major modifications** of existing sources are subject to federal New Source Review (NSR) requirements, which require VOC controls at the Lowest Achievable Emission Rate (LAER). A *major source* is a source that emits or has the potential to emit 50 tons per year (tpy) or more of VOCs. *Major modification* thresholds are defined in the statewide permitting program section of the Rules according to geographical area. LAER is required for such sources throughout the Ozone Transport Region (OTR), which consists of all the Northeastern states from Maine to Virginia. LAER, defined as either the most effective technology in current use or required in any state irrespective of cost, is much more stringent than RACT in most situations.

Applicability Provisions of the VOC RACT Rule

The VOC RACT rule applies to facilities that meet either a specific "RACT applicability emissions threshold" (RAET) or other design, size, or product output criteria. Such thresholds and criteria have been established by the U.S. Environmental Protection Agency for over 40 categories of industrial sources. Sources that don't fall into one of the categories, but which are major sources as defined above are also subject to the VOC RACT rule.

Sources in the following categories are "RACT-applicable," and are subject at least to state level RACT review and possibly RACT-level controls, if they emit VOCs in an amount that exceeds the potential emissions or other thresholds.

Category	RACT Applicability Thresholds or Criteria
Coating/Finishing/Printing Categories:	
• Can coating, paper/fabric/film/foil coating, specialty printing, vinyl/urethane substrate coating, metal furniture coating, magnetic wire insulation coating, metal coil coating, miscellaneous metal part coating	≥10 tons per year
• Wood furniture coating	≥25 tons per year
• Plastic parts coating, wood burial casket coating, gunstock coating	≥50 tons per year
• Graphic arts printing (except specialty printing)	≥50 tons per year
Volatile Organic Liquid (VOL) Storage, Transport and Refining Categories:	
• Fixed roof storage tank, external floating roof storage tank	Storage Capacity > 40,000 gallons, with designated exclusions
• Bulk gasoline facilities	All facilities affected, with designated exclusions; specific compliance requirements dependent upon daily throughput
Other Categories:	
• Cutback and emulsified asphalt	All applications in paving of public roads and highways
• Solvent metal cleaning	All operations, unless exempt as a "minor core" activity (see below)

In determining the applicability of the VOC RACT rule to a specific facility, certain types of activities are excluded. These include research and testing activities that aggregate to less than 5 tpy, "non-core" activities unrelated to a company's product line (e.g., the operation of office equipment), small amounts of non-compliant coatings and special agents, and "minor core" industrial processes in categories dissimilar from the principal activity of the facility totaling less than 5 tpy. In addition, New Hampshire's VOC RACT rule allows coating and printing facilities to "permit-out," or escape RACT requirements, if their *actual* emissions have not equaled or exceeded the RAET during any consecutive 12 months since May 31, 1995, contingent on certain conditions [Env-A 1204.02(f)]. Since New Hampshire structured its VOC RACT rule to allow some flexibility, a source should carefully determine if and which sections of the rule apply and what compliance options are available.

Compliance Provisions of the VOC RACT Rule

The VOC RACT rule requires owners and operators of affected sources to file a compliance plan and obtain approval from the N.H. Department of Environmental Services. The Clean Air Act requires all affected sources to be in compliance with the applicable provisions of the rule by May 31, 1995.

Owners and operators of sources determined to be subject to the VOC RACT rule face a variety of compliance obligations, depending on the source category or sub-category. EPA has published so-called "control techniques guidelines" (CTGs) for most of the defined source categories. These CTGs serve as the basis for New Hampshire's compliance provisions for classifiable processes and devices. For coating and finishing processes, this generally means satisfying a prescribed emission rate limit (pounds of VOC per gallon) or possibly an application technique. Standards for classifiable printing and graphic arts processes are primarily VOC content limits or prescribed reductions. Volatile organic liquid storage and transport facilities and refineries may be required to make certain design adaptations, including retrofits, and to meet a variety of operation and maintenance standards to minimize fugitive emissions.

The VOC RACT rule provides flexibility to affected sources by offering a number of compliance options, including alternative RACT standards for sources that, for legitimate reasons, cannot meet the prescribed standards. Such sources must obtain a "RACT Order," which is subject to EPA approval [Env-A 1204.05].

For More Information

The VOC RACT rule is a complex, federally mandated rule involving multiple conditions, applicabilities, compliance options and procedures. The New Hampshire Department of Environmental Services Air Resources Division can help facilities in determining their RACT applicability and assessing compliance options. For more information on the VOC RACT rule, or New Hampshire's air pollution permitting program in general, please contact the DES Air Resources Division, PO Box 95, Concord, NH 03302-0095; (603) 271-1370; http://des.nh.gov/organization/divisions/air/contactus.htm.